

Attorney's Docket No.:06618-488001

REMARKS

Reconsideration and allowance of the above application are respectfully requested.

Claims 1-83 remain pending in which Claims 1-4, 22-62, and 71-83 are withdrawn from consideration and Claims 5-21 and 63-70 are under examination. Certain claims have been amended to correct incorrect claim dependency due to the prior renumbering of the claims. Applicants gratefully acknowledge the Examiner's allowance of Claims 63-70.

Claims 5-21 stand rejected as allegedly being obvious under 35 USC 103(a) over Wach in view of Payne, with or without in further view of Hong or Doriath. These contentions are respectfully traversed.

Wach discloses in its FIG. 61 a fiber probe device 6100 having a delivery fiber 6103 and a collection fiber 6108 for filtering the delivering a probe light to an investigative medium 6150 with elastic and inelastic processes. An angled notch filter 6125 is formed in the delivery fiber 6103 to reflect and filter light. Light 6155 radiated from the medium 6150 is filtered by the filter 6125 to transmit desired light 6165 to the collection fiber 6108 for detection. See, columns 44, 45, and 46. Hence, the delivery fiber 6103 is used to deliver the probe light to the medium 6150 and the collection fiber 6108 is used to collect desired signal light from the

Attorney's Docket No.: 06618-488001

medium 6150 for detection. This probe device 6100 is entirely different from Claims 5-21.

Claims 5-21 recite a device that includes a laser, an optical fiber, a measurand surface, and a photodetector (see the base Claim 5). The measurand surface is "adjacent to said second distal end of said fiber and parallel to said fiber core." Contrary to the contention in the office action, the numeral "6150" in FIG. 61 of Wach is not such a measurand surface. Wach discloses "6150" as an investigative medium with elastic and inelastic processes in Column 45, lines 37-40. Wach fails to disclose the measurand surface adjacent to said second distal end of said fiber and parallel to said fiber core as recited in Claims 5-21.

In addition, Claims 5-21 recite the measurand surface as being in a plane that intercepts with another plane defined by said end facet to form a line substantially perpendicular to said fiber core and further recite that said measurand surface is at least partially reflective to form an optical interferometer with said side fiber surface so that a first reflection of a beam produced at said side fiber surface interferes at said side fiber surface with a second reflection of the beam produced at said measurand surface. Nothing in Wach describes these features.

Attorney's Docket No.: 06618-488001

Furthermore, Claims 5-21 recite the photodetector to be coupled to receive a reflected probe beam through said fiber. In contrast, Wach specifically describes that the detector receives light from a collection fiber 6108, rather than the delivery fiber 6103.

Notably, Claims 5-21 recite the photodetector for representing the interference between said first and second reflections to produce a detector output indicative of a spacing between said measurand surface and said side fiber surface. Wach fails to teach this use of the interference of two reflections to indicate a spacing between the measurand surface and the side fiber surface.

In this regard, the Office Action contends that "light reflects back off the measuring area into the fiber, generating interference with light inside the fiber, which is then detected at a photodetector not depicted in the figure" (page 3, lines 4-6 of the Office Action). This appears to be based on an incorrect reading of Wach.

Contrary to this statement in the Office Action, Wach specifically discloses that "interference from surface reflections is minimized" (Column 45, lines 34-35). At column 45, lines 37-59, Wach describes the use of the notch filters 6125 and 6180 to remove the light at the incident laser wavelength from the detected light 6170 sent to the detector so

Attorney's Docket No.:06618-488001

that the detected light 6170 only has shifted wavelengths caused by the medium 6150. Therefore, the detector in Wach cannot receive interference information caused by the side surface of the delivery fiber 6103 where the probe light 6130 passes through to reach the medium 6150. In fact, Wach designs the device 6100 to minimize any interference, including the interference at the shifted wavelengths due to the reflections at the filter 6180 in the collection fiber 6108 in order to deliver "pure, wavelength-shifted 6172 light" to the detector (Column 45, lines 53-59).

In essence, the probe device 6100 in FIG. 61 of Wach is designed to obtain spectroscopic information in the shifted wavelengths caused by the processes within the medium 6150. As such, Wach's device 6100 in FIG. 61 is entirely different from Claims 5-21. Wach does not in any way suggest the use of the interference for measuring distance in the combination recited in Claims 5-21.

Therefore, it is evident from the above analysis that Wach fails to disclose a number of features in Claims 5-21. The cited Payne does not disclose these features of Claims 5-21 either. Similarly, the alleged combination of Wach, Payne, and Hong or Doriath also fail to disclose the features in Claims 5-21. Hence, Claims 5-21 are distinctly different from and are patentable over the cited prior art. Hence, the rejections

Attorney's Docket No.: 06618-488001

under 35 USC 103(a) are improper for lack of support in the cited prior art and should be withdrawn.

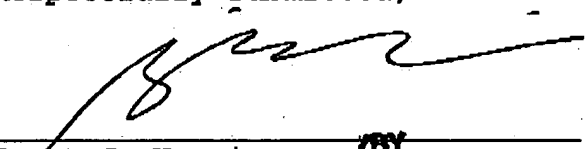
The rejections to Claims 5-21 are improper also because the rejections apparently use the hindsight after having the benefit of the present disclosure by Applicants. Under 35 USC 103(a), such hindsight is impermissible. As discussed above, the Office Action misconstrued the technical disclosure of Wach in statements made to support the rejections with respect to the interference effects in Wach. It appears that the Patent Office takes the word "interference" in Wach out of context in order to support the rejections that are not supported by Wach's disclosure.

In summary, Claims 5-21 are patentable. Hence, all claims currently under examination, Claims 5-21 and 63-70, are patentable.

Please apply any applicable charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: November 4, 2003



Scott C. Harris
Reg. No. 32,030

/BY
BING AI
REG. NO. 43,312

Fish & Richardson P.C.
PTO Customer Number: 20985
12390 El Camino Real
San Diego, CA 92130
Telephone: (858) 678-5070
Facsimile: (858) 678-5099
10342320.doc